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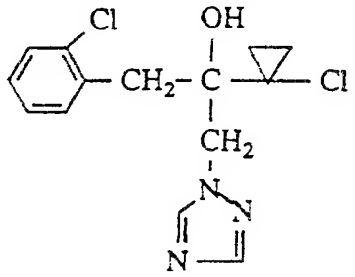
(56) Documents cited
EP 0453922 A1 EP 0453915 A1 EP 0453899 A1
EP 0297345 A1

(58) Field of search
UK CL (Edition K) A5E EBB
INT CL[5] A01N
Online databases: CAS ONLINE

(54) Synergistic fungicidal combinations

(57) New synergistic fungicidal combinations consist of 1-(2-chlorophenyl)-2-(1-chloro-cycloprop-1-yl)-3-(1,2,4-triazol-1-yl)-propan-2-ol, of the formula



(I)

and at least one of tebuconazole, triadimenol, bitertanol, triadimefon, chlorothalonil, carbendazim, thiram, quinomethionate, anilazin, fenpropidin, tridemorph, fenpropemorph, adimorph and fentin acetate.

GB 2 262 037 A

Fungicidal active compound combinations

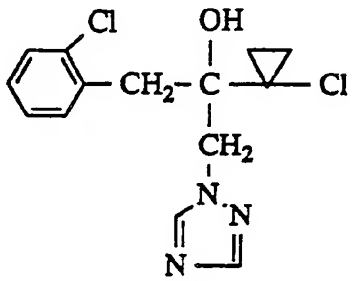
The present application relates to new active compound combinations which consist, on the one hand, of 1-(2-chlorophenyl)-2-(1-chloro-cycloprop-1-yl)-3-(1,2,4-triazol-1-yl)-propan-2-ol, which is known, and, on the other hand, of further, known fungicidal active compounds and which are very suitable for combating phytopathogenic fungi.

It has already been disclosed that 1-(2-chlorophenyl)-2-(1-chloro-cycloprop-1-yl)-3-(1,2,4-triazol-1-yl)-propan-2-ol has fungicidal properties (cf. EP-OS (European Published Specification) 0,297,345). The activity of this substance is good; however, in some cases it leaves something to be desired when application rates are low.

It is furthermore already known that a large number of azole derivatives, aromatic carboxylic acid derivatives, morpholine compounds and other heterocycles can be used for combating fungi (cf. K. H. Büchel "Pflanzenschutz und Schädlingsbekämpfung" [Crop Protection and Pest Control] pages 87, 136, 140, 141 and 146 to 153, Georg Thieme Verlag, Stuttgart 1977). However, the action of the substances in question is not always satisfactory when application rates are low.

It has now been found that the new active compound combinations of

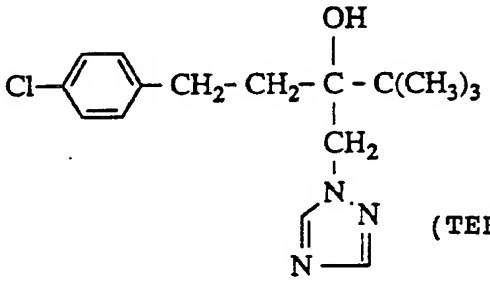
1-(2-chlorophenyl)-2-(1-chloro-cycloprop-1-yl)-3-(1,2,4-triazol-1-yl)-propan-2-ol, of the formula



(I)

and

(A) 1-(4-chlorophenyl)-4,4-dimethyl-3-(1,2,4-triazol-1-yl-methyl)-pentan-3-ol, of the formula

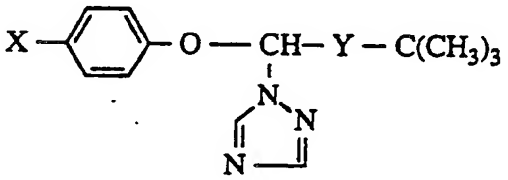


(II)

(TEBUCONAZOLE)

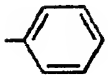
and/or

(B) an azole derivative of the formula



(III)

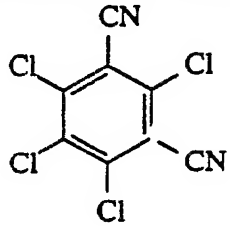
(IIIa) X = Cl; Y = -CH(OH)- (TRIADIMENOL)

(IIIb) X =  ; Y = -CH(OH)- (BITERTANOL)

(IIIc) X = Cl; Y =  (TRIADIMEFON)

and/or

(C) tetrachloro-isophthalo-dinitrile, of the formula

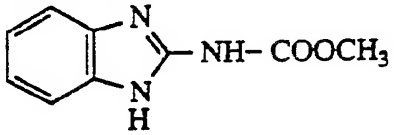


(IV)

(CHLOROTHALONIL)

and/or

(D) methyl benzimidazole-2-carbamate, of the formula

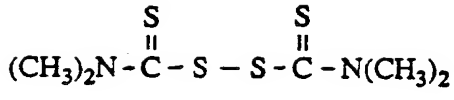


(V)

(CARBENDAZIM)

and/or

(E) tetramethyl-thiuram disulphide, of the formula

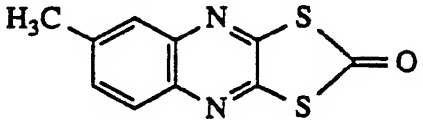


(VI)

(THIRAM)

and/or

(F) 6-methyl-2-oxo-1,3-dithiolo[4.5b]-quinoxaline, of the formula

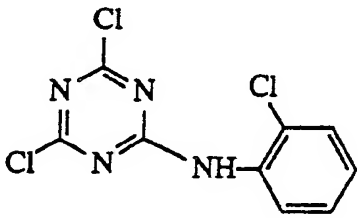


(VII)

(QUINOMETHIONATE)

and/or

(G) the triazine derivative of the formula

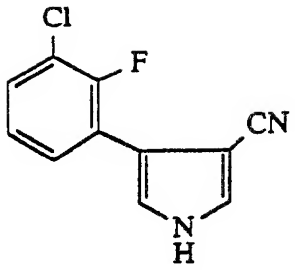


(VIII)

(ANILAZIN)

and/or

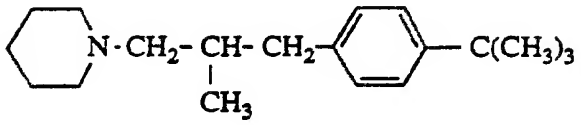
(H) 3-cyano-4-(2-fluoro-3-chlorophenyl)-pyrrole, of the formula



(IX)

and/or

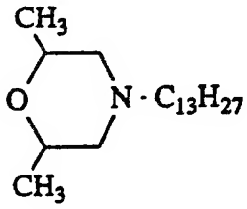
(I) the piperidine derivative of the formula



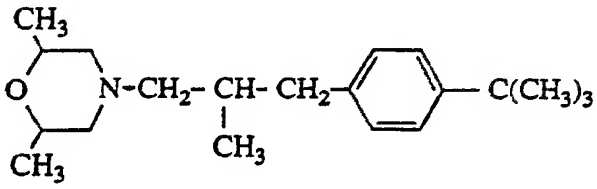
(X)
(FENPROPIDIN)

and/or

(K) a morpholine derivative of the formula

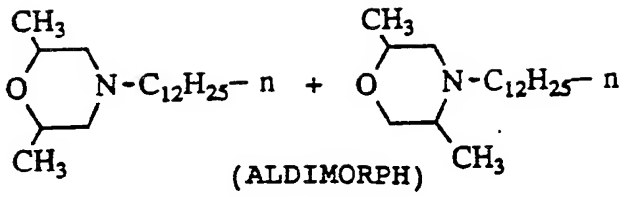


(XIa)
(TRIDEMORPH)



(XIb)
(FENPROPEMORPH)

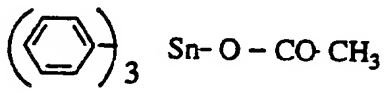
or



(ALDIMORPH) (XIc)

and/or

(L) the triphenyl-tin acetate of the formula



(FENTIN ACETATE) (XII)

have very good fungicidal properties.

Surprisingly, the fungicidal action of the active compound combinations according to the invention is considerably higher than the total of the actions of the individual active compounds. This means that there is a true synergistic effect, which could not have been anticipated, and not only a complementation of action.

It can be seen from the structural formula of the active compound of the formula (I) that the compound has an asymmetrically substituted carbon atom. The product can therefore exist in the form of a mixture of various isomers or else in the form of an individual component. The active compound of the formula (I) has been disclosed

(cf. EP-OS (European Published Specification) 0,297,345).

The other fungicidal active compounds which are present in the combinations according to the invention are also known. Specifically, the active compounds are described in the following publications:

(A): EP-OS (European Published Specification) 0,040,345;
(B): DE-OS (German Published Specification) 2,324,010 and DE-OS (German Published Specification) 2,201,063;
(C): K. H. Büchel "Pflanzenschutz und Schädlingsbekämpfung" [Crop Protection and Pest Control], page 146, Georg Thieme Verlag, Stuttgart 1977;
(D): US Patent Specification 3,010,968;
(E): K. H. Büchel, loc. cit., page 136;
(F): K. H. Büchel, loc. cit., page 87;
(G): K. H. Büchel, loc. cit., page 153;
(H): DE-OS (German Published Specification) 3,737,984;
(I): DE-OS (German Published Specification) 2,752,135;
(K): K. H. Büchel, loc. cit., page 149 and DD Patent Specification 140,412 and
(L): Angew. Chem. 70, 135 (1958).

Besides the active compound of the formula (I), the active compound combinations according to the invention contain at least one active compound from amongst the compounds of groups (A) to (L). In addition, they can also contain other fungicidally active components in the mixture.

The synergistic effect becomes particularly apparent when the active compounds are present in certain ratios by weight in the active compound combinations according to the invention. However, the ratios by weight of the active compound in the active compound combinations can be varied within a relatively wide range. In general,

- 0.02 to 50 parts by weight, preferably
  0.1 to 10 parts by weight of active compound from group (A),
- 0.02 to 50 parts by weight, preferably
  0.1 to 10 parts by weight of active compound from group (B)
- 0.02 to 50 parts by weight, preferably
  0.02 to 20 parts by weight of active compound from group (C)
- 0.02 to 50 parts by weight, preferably
  0.1 to 10 parts by weight of active compound from group (D)
- 0.02 to 50 parts by weight, preferably
  0.1 to 10 parts by weight of active compound from group (E)
- 0.02 to 50 parts by weight, preferably
  0.1 to 10 parts by weight of active compound from group (F)
- 0.02 to 50 parts by weight, preferably
  1 to 20 parts by weight of active compound from group (G)

- 0.02 to 50 parts by weight, preferably
  0.1 to 10 parts by weight of active compound from group (H)
- 0.02 to 50 parts by weight, preferably
  0.1 to 10 parts by weight of active compound from group (I)
- 0.02 to 50 parts by weight, preferably
  0.1 to 10 parts by weight of active compound from group (K)
- 0.02 to 50 parts by weight, preferably
  0.1 to 10 parts by weight of active compound from group (L)

are used per part by weight of active compound of the formula (I).

The active compound combinations according to the invention have very good fungicidal properties and can be employed for combating phytopathogenic fungi such as Plasmodiophoromycetes, Oomycetes, Chytridiomycetes, Zygomycetes, Ascomycetes, Basidiomycetes, Deuteromycetes and the like.

The active compound combinations according to the invention are particularly suitable for combating cereal diseases such as Erysiphe, Cochliobolus, Pyrenophora, Leptosphaeria, Fusarium and Pseudocercosporella.

The good toleration, by plants, of the active compound combinations at the concentrations required for combating

plant diseases permits treatment of above-ground parts of the plants, propagation stock and seed, and the soil.

The active compound combinations can be converted into the customary formulations, such as solutions, emulsions, suspensions, powders, foams, pastes, granules, aerosols, very fine capsules in polymeric substances and in coating compositions for seed, as well as ULV formulations.

These formulations are produced in a known manner, for example by mixing the active compounds, or active compound combinations, with extenders, that is, liquid solvents, liquefied gases under pressure, and/or solid carriers, optionally with the use of surface-active agents, that is, emulsifying agents and/or dispersing agents, and/or foam-forming agents. In the case of the use of water as an extender, organic solvents can, for example, also be used as auxiliary solvents. As liquid solvents, there are suitable in the main: aromatics, such as xylene, toluene or alkylnaphthalenes, chlorinated aromatics or chlorinated aliphatic hydrocarbons, such as chlorobenzenes, chloroethylenes or methylene chloride, aliphatic hydrocarbons, such as cyclohexane or paraffins, for example mineral oil fractions, alcohols, such as butanol or glycol as well as their ethers and esters, ketones, such as acetone, methyl ethyl ketone, methyl isobutyl ketone or cyclohexanone, strongly polar solvents, such as dimethylformamide and dimethyl sulphoxide, as well as water. By liquefied gaseous extenders or carriers are meant liquids which are gaseous at ambient

temperature and under atmospheric pressure, for example aerosol propellants, such as butane, propane, nitrogen and carbon dioxide. As solid carriers there are suitable: for example ground natural minerals, such as kaolins, clays, talc, chalk, quartz, attapulgite, montmorillonite or diatomaceous earth, and ground synthetic minerals, such as highly-disperse silica, alumina and silicates. As solid carriers for granules there are suitable: for example crushed and fractionated natural rocks such as calcite, marble, pumice, sepiolite and dolomite, as well as synthetic granules of inorganic and organic meals, and granules of organic material such as sawdust, coconut shells, maize cobs and tobacco stalks. As emulsifying and/or foam-forming agents there are suitable: for example non-ionic and anionic emulsifiers, such as polyoxyethylene fatty acid esters, polyoxyethylene fatty alcohol ethers, for example alkylaryl polyglycol ethers, alkylsulphonates, alkyl sulphates, arylsulphonates as well as albumen hydrolysis products. As dispersing agents there are suitable: for example lignin-sulphite waste liquors and methylcellulose.

Adhesives such as carboxymethylcellulose and natural and synthetic polymers in the form of powders, granules or latices, such as gum arabic, polyvinyl alcohol and polyvinyl acetate, as well as natural phospholipids, such as cephalins and lecithins, and synthetic phospholipids, can be used in the formulations. Other additives can be mineral and vegetable oils.

It is possible to use colorants such as inorganic pigments, for example iron oxide, titanium oxide and Prussian Blue, and organic dyestuffs, such as alizarin dyestuffs, azo dyestuffs and metal phthalocyanine dyestuffs, and trace nutrients such as salts of iron, manganese, boron, copper, cobalt, molybdenum and zinc.

The formulations in general contain between 0.1 and 95 per cent by weight of active compound, preferably between 0.5 and 90%.

The active compound combinations according to the invention can be present in the formulations as a mixture with other known active compounds, such as fungicides, insecticides, acaricides and herbicides, as well as in mixtures with fertilizers or plant growth regulators.

The active compound combinations can be used as such or in the form of their formulations or the use forms prepared therefrom, such as ready-to-use solutions, emulsifiable concentrates, emulsions, suspensions, wettable powders, soluble powders and granules. They are used in the customary manner, for example by watering, spraying, atomizing, scattering, brushing on, as dry seed treatment, moist seed treatment or wet seed treatment, or by slurry dressing or incrusting.

In the treatment of parts of plants, the active compound concentrations in the use forms can be varied within a substantial range. They are, in general, between 1 and

0.0001% by weight, preferably between 0.5 and 0.001%.

In the treatment of seed, amounts of active compound of 0.001 to 50 g per kilogram of seed, preferably 0.01 to 10 g, are generally required.

For the treatment of soil, active compound concentrations of 0.00001 to 0.1% by weight, preferably 0.0001 to 0.02% by weight, are required at the place of action.

The good fungicidal action of the active compound combinations according to the invention can be seen from the examples which follow. While there are shortcomings of the individual active compounds with regard to the fungicidal action, the combinations show an activity which transgresses a simple cumulation of the activities.

A synergistic effect in fungicides is always present when the fungicidal action of the active compound combinations is greater than the total of the activities of the active compounds applied individually.

Example 1

Erysiphe test (barley)/protective

To prepare a suitable active compound preparation, commercially available active compound formulations are diluted with water to the particular concentration desired.

To test for protective activity, young plants are sprayed with the active compound preparation until dew-moist. After the spray coating has dried on, the plants are dusted with spores of Erysiphe graminis f.sp. hordei.

The plants are placed in a greenhouse at a temperature of approx. 20°C and a relative atmospheric humidity of approx. 80% to favour the development of mildew pustules.

The test is evaluated 7 days after the inoculation.

Active compounds, active compound concentrations and test results can be seen from the Tables which follow.

Table 1a

Erysiphe test (barley)/protective

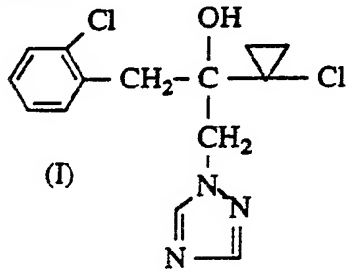
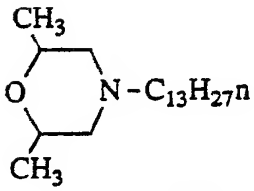
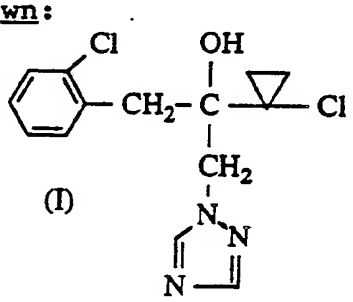
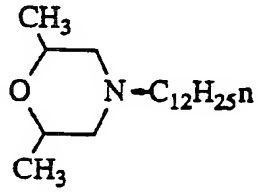
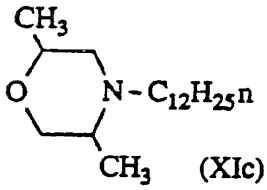
Active compound	Active compound concentration in the spray mixture in ppm	Degree of effectiveness in % of the untreated control
Known:  (I)	2 0,5	75 75
 (XIa)	0,5	25
According to the invention: (I) + (XIa) (1 : 1)	0,25 + 0,25	100

Table 1b

Erysiphe test (barley)/protective

Active compound	Active compound concentration in the spray mixture in ppm	Degree of effectiveness in % of the untreated control
Known:  (I)	0,125	88
  (XIc)	0,125	25
According to the invention:		
(I) + (XIc) (1 : 1)	0,0625 + 0,0625	100

Example 2

Erysiphe test (wheat)/curative

To prepare a suitable active compound preparation, commercially available active compound formulations are diluted with water to the particular concentration desired.

To test for curative activity, young plants are dusted with spores of Erysiphe graminis f.sp. tritici. 48 hours after the inoculation, the plants are sprayed with the active compound preparation until dew-moist.

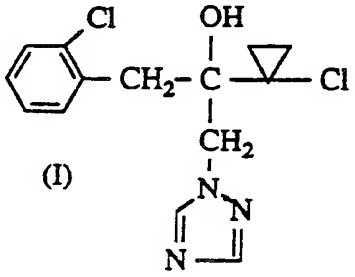
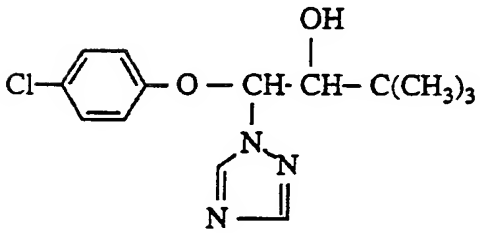
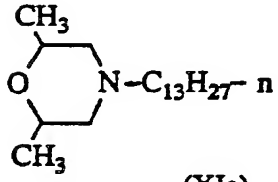
The plants are placed in a greenhouse at a temperature of approx. 20°C and a relative atmospheric humidity of approx. 80% to favour the development of mildew pustules.

The test is evaluated 7 days after the inoculation.

Active compounds, active compound concentrations and test results can be seen from the Tables which follow.

Table 2a

Erysiphe test (wheat)/curative

Active compound	Active compound concentration in the spray mixture in ppm	Degree of effectiveness in % of the untreated control
Known:  (I)	1	88
 (IIIa)	1	75
 (XIa)	1	75

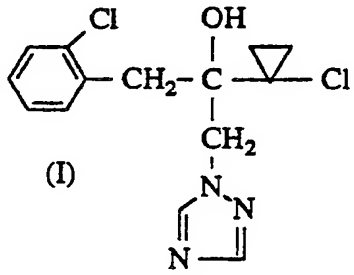
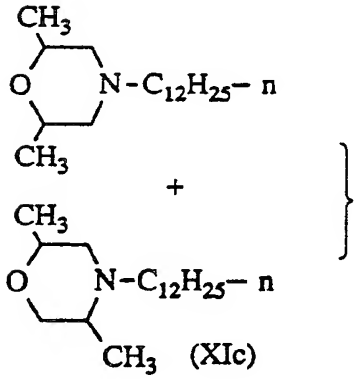
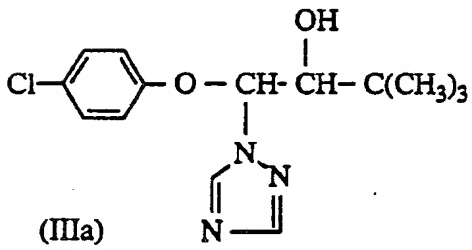
T a b l e 2a (Continuation)

Erysiphe test (wheat)/curative

Active compound	Active compound concentration in the spray mixture in ppm	Degree of effectiveness in % of the untreated control
According to the invention:		
(I) + (IIIa) (1 : 1)	0,5 + 0,5	100
(I) + (XIa) (1 : 1)	0,5 + 0,5	100

Table 2b

Erysiphe test (wheat)/curative

Active compound	Active compound concentration in the spray mixture in ppm	Degree of effectiveness in % of the untreated control
Known:		
 (I)	0.5	88
 (XIc)	0.5	88
 (IIIa)	0.5	79

T a b l e 2b (Continuation)

Erysiphe test (wheat)/curative

Active compound		Active compound concentration in the spray mixture in ppm	Degree of effectiveness in % of the untreated control
According to the invention:			
(I) + (XIc)	(1 : 1)	0,25 + 0,25	100
(I) + (IIIa)	(1 : 1)	0,25 + 0,25	100

Example 3

Cochliobolus sativus test (barley)/protective

To prepare a suitable active compound preparation, commercially available active compound formulations are diluted with water to the particular concentration desired.

To test for protective activity, young plants are sprayed with the active compound preparation until dew-moist. After the spray coating has dried on, the plants are sprayed with a conidia suspension of Cochliobolus sativus. The plants remain for 48 hours in an incubation cabin at 20°C and 100% relative atmospheric humidity.

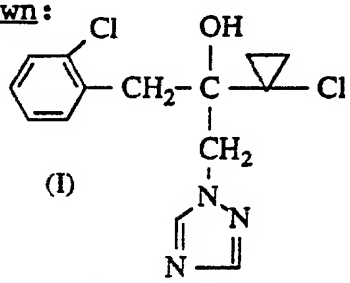
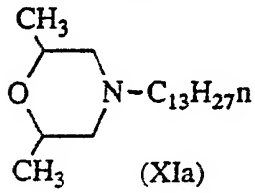
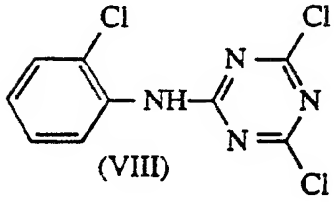
The plants are placed in a greenhouse at a temperature of approx. 20°C and a relative atmospheric humidity of approx. 80%.

The test is evaluated 7 days after the inoculation.

Active compounds, active compound concentrations and test results can be seen from the Table which follow.

Table 3

Cochliobolus sativus test (barley)/protective

Active compound	Active compound concentration in the spray mixture in ppm	Degree of effectiveness in % of the untreated control
Known:  (I)	6.25	88
 (XIa)	6.25	25
 (VIII)	6.25	25
According to the invention:		
(I) + (XIa) (1 : 1)	3.125 + 3.125	100
(I) + (VIII) (1 : 1)	3.125 + 3.125	100

Example 4

Pyrenophora teres test (barley)/protective

To prepare a suitable active compound preparation, commercially available active compound formulations are diluted with water to the particular concentration desired.

To test for protective activity, young plants are sprayed with the active compound preparation until dew-moist. After the spray coating has dried on, the plants are sprayed with a conidia suspension of Pyrenophora teres. The plants remain for 48 hours in an incubation cabin at 20°C and 100% relative atmospheric humidity.

The plants are placed in a greenhouse at a temperature of approx. 20°C and a relative atmospheric humidity of approx. 80%.

The test is evaluated 7 days after the inoculation.

Active compounds, active compound concentrations and test results can be seen from the Tables which follow.

Table 4a

Pyrenophora teres test (barley)/protective

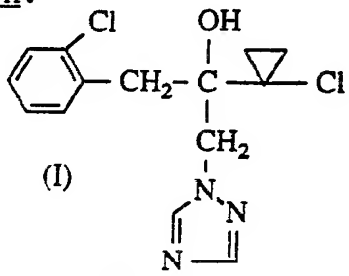
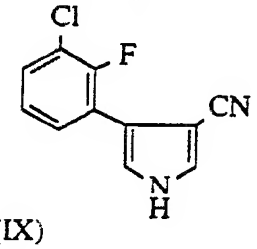
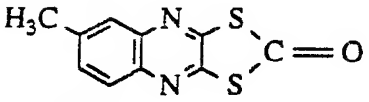
Active compound	Active compound concentration in the spray mixture in ppm	Degree of effectiveness in % of the untreated control
Known:		
 (I)	25	96
 (IX)	25	88
 (VII)	25	25
According to the invention:		
(I) + (IX) (1 : 1)	12,5 + 12,5	100
(I) + (VII) (1 : 1)	12,5 + 12,5	100

Table 4b

Pyrenophora teres test (barley)/protective

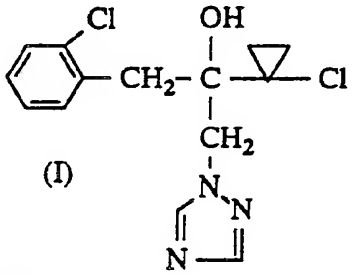
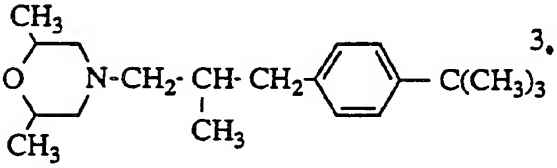
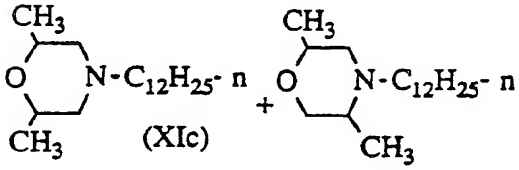
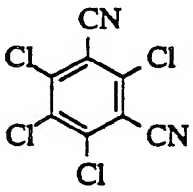
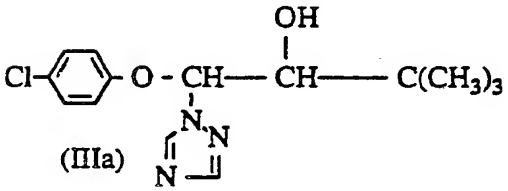
Active compound	Active compound concentration in the spray mixture in ppm	Degree of effectiveness in % of the untreated control
Known:  (I)	3.125	81
 (XIb)	3.125	62
 (XIc)	3.125	62
 (IV)	3.125	68
 (IIIa)	3.125	68

Table 4b (Continuation)

Pyrenophora teres test (barley)/protective

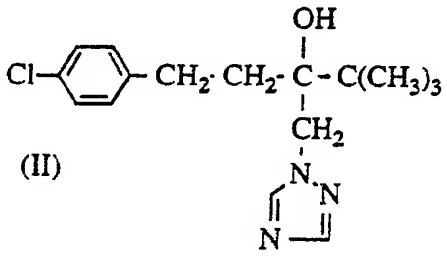
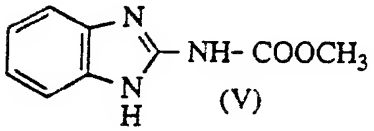
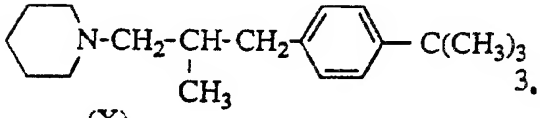
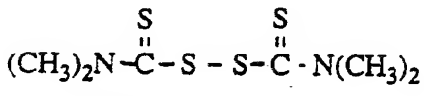
Active compound	Active compound concentration in the spray mixture in ppm	Degree of effectiveness in % of the untreated control
Known:		
 (II)	3.125	81
 (V)	3.125	0
 (X)	3.125	81
 (VI)	3.125	81

Table 4b (Continuation)

Pyrenophora teres test (barley)/protective

Active compound	Active compound concentration in the spray mixture in ppm	Degree of effectiveness in % of the untreated control
According to the invention:		
(I) + (XIb) } (1 : 1)	1,5625 + 1,5625 }	100
(I) + (XIc) } (1 : 1)	1,5625 + 1,5625 }	100
(I) + (IV) } (1 : 1)	1,5625 + 1,5625 }	100
(I) + (IIIa) } (1 : 1)	1,5625 + 1,5625 }	100
(I) + (II) } (1 : 1)	1,5625 + 1,5625 }	100
(I) + (V) } (1 : 1)	1,5625 + 1,5625 }	100
(I) + (X) } (1 : 1)	1,5625 + 1,5625 }	100
(I) + (VI) } (1 : 1)	1,5625 + 1,5625 }	100

Example 5

Leptosphaeria nodorum test (wheat)/protective

To prepare a suitable active compound preparation, commercially available active compound formulations are diluted with water to the particular concentration desired.

To test for protective activity, young plants are sprayed with the active compound preparation until dew-moist. After the spray coating has dried on, the plants are sprayed with a spore suspension of Leptosphaeria nodorum. The plants remain for 48 hours in an incubation cabin at 20°C and 100% relative atmospheric humidity.

The plants are placed in a greenhouse at a temperature of approx. 20°C and a relative atmospheric humidity of approx. 80%.

The test is evaluated 10 days after the inoculation.

Active compounds, active compound concentrations and test results can be seen from the Table which follows.

Table 5

Leptosphaeria nodorum test (wheat)/protective

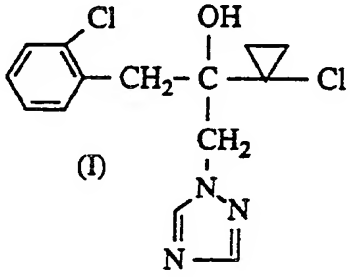
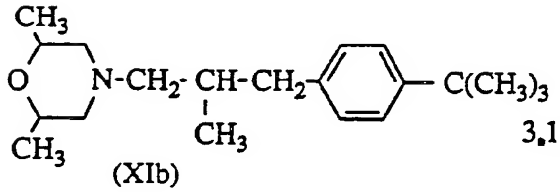
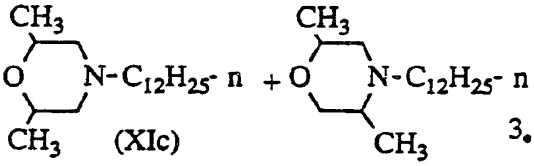
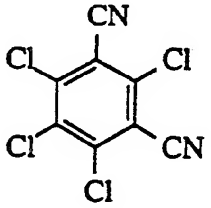
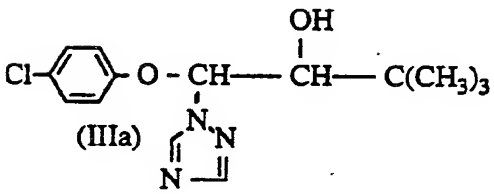
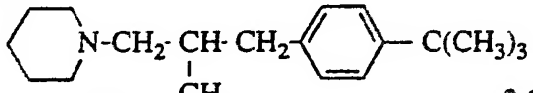
Active compound	Active compound concentration in the spray mixture in ppm	Degree of effectiveness in % of the untreated control
Known:		
 (I)	3.125	76
 (XIb)	3.125	0
 (XIc)	3.125	0
 (IV)	3.125	0
 (IIIa)	3.125	0

Table 5 (Continuation)

Leptosphaeria nodorum test (wheat)/protective

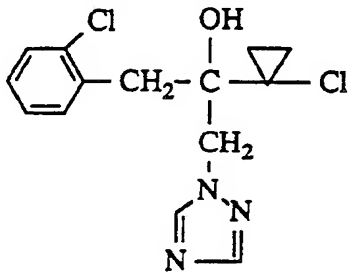
Active compound	Active compound concentration in the spray mixture in ppm	Degree of effectiveness in % of the untreated control
Known:  (X)	3.125	62
According to the invention:		
(I) + (XIb) } (1 : 1)	1.5625 + 1.5625 }	100
(I) + (XIc) } (1 : 1)	1.5625 + 1.5625 }	100
(I) + (IV) } (1 : 1)	1.5625 + 1.5625 }	100
(I) + (IIIa) } (1 : 1)	1.5625 + 1.5625 }	100
(I) + (X) } (1 : 1)	1.5625 + 1.5625 }	100

It will be understood that the invention has been described above purely by way of example, and that various modifications of detail can be made within the ambit of the invention.

Patent Claims

1. Fungicidal agents, characterised in that they contain an active compound combination consisting of

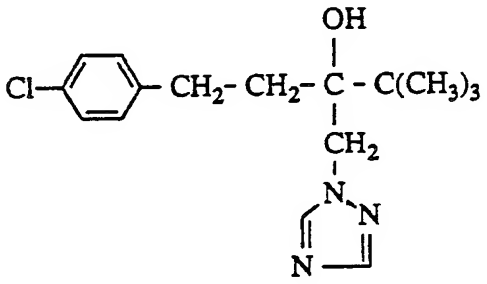
1-(2-chlorophenyl)-2-(1-chloro-cycloprop-1-yl)-3-(1,2,4-triazol-1-yl)-propan-2-ol, of the formula



(I)

and

(A) 1-(4-chlorophenyl)-4,4-dimethyl-3-(1,2,4-triazol-1-yl-methyl)-pentan-3-ol, of the formula

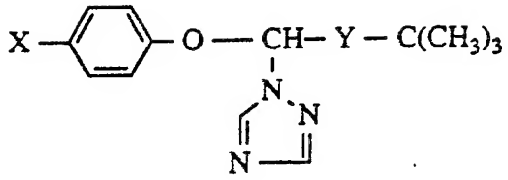


(II)

(TEBUCONAZOLE)

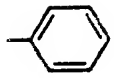
and/or

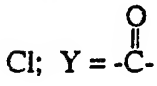
(B) an azole derivative of the formula



(III)

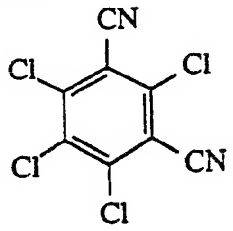
(IIIa) X = Cl; Y = -CH(OH)- (TRIADIMENOL)

(IIIb) X =  ; Y = -CH(OH)- (BITERTANOL)

(IIIc) X = Cl; Y =  (TRIADIMEFON)

and/or

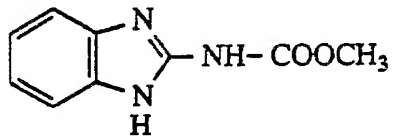
(C) tetrachloro-isophthalo-dinitrile, of the formula



(IV)
(CHLOROTHALONIL)

and/or

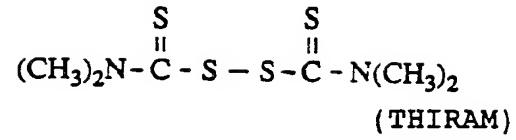
(D) methyl benzimidazole-2-carbamate, of the formula



(V)
(CARBENDAZIM)

and/or

(E) tetramethyl-thiuram disulphide, of the formula

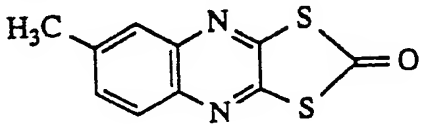


(VI)

(THIRAM)

and/or

(F) 6-methyl-2-oxo-1,3-dithiolo[4,5b]-quinoxaline, of the formula

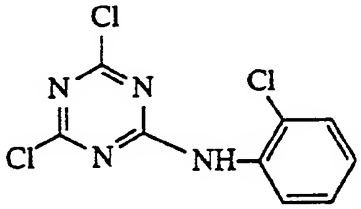


(VII)

(QUINOMETHIONATE)

and/or

(G) the triazine derivative of the formula

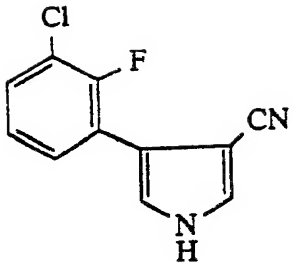


(VIII)

(ANILAZIN)

and/or

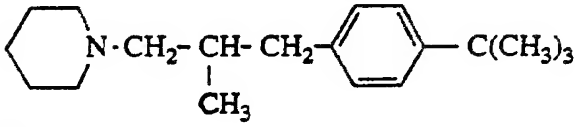
(H) 3-cyano-4-(2-fluoro-3-chlorophenyl)-pyrrole, of the formula



(IX)

and/or

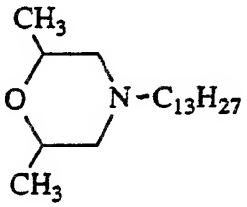
(I) the piperidine derivative of the formula



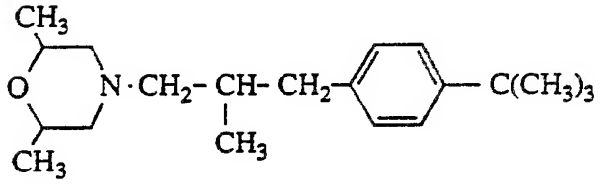
(X)
(FENPROPIDIN)

and/or

(K) a morpholine derivative of the formula

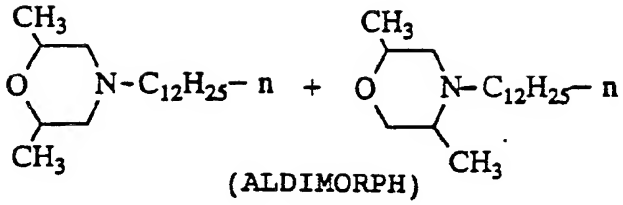


(XIa)
(TRIDEMORPH)



(XIb)
(FENPROPEMORPH)

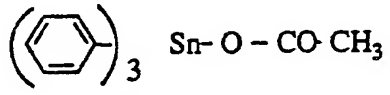
or



(ALDIMORPH) (XIc)

and/or

(L) the triphenyl-tin acetate of the formula



(FENTIN ACETATE). (XII)

2. Agents according to Claim 1, characterised in that, in the active compound combinations, the ratio by weight of active compound of the formula (I)

- to active compound of group (A) is between 1:0.02 and 1:50,
- to active compound of group (B) is between 1:0.02 and 1:50,
- to active compound of group (C) is between 1:0.02 and 1:50,
- to active compound of group (D) is between 1:0.02 and 1:50,
- to active compound of group (E) is between 1:0.02 and 1:50,
- to active compound of group (F) is between 1:0.02

and 1:50,

- to active compound of group (G) is between 1:0.02 and 1:50,
- to active compound of group (H) is between 1:0.02 and 1:50,
- to active compound of group (I) is between 1:0.02 and 1:50,
- to active compound of group (K) is between 1:0.02 and 1:50,
- to active compound of group (L) is between 1:0.02 and 1:50.

3. Method of combating fungi, characterised in that active compound combinations according to Claim 1 are allowed to act on the fungi and/or their environment.

4. Use of active compound combinations according to Claim 1 for combating fungi.

5. Process for the preparation of fungicidal agents, characterised in that active compound combinations according to Claim 1 are mixed with extenders and/or surface-active substances.

6. Fungicidal agents according to claim 1, substantially as hereinbefore described in any one of the Examples.

Patents Act 1977
Examiner's report to the Comptroller under Section 17 (The Search Report)

Application number
GB 9225131.3

Relevant Technical fields

(i) UK Cl (Edition L) A5E EBB

(ii) Int Cl (Edition 5) A01N

Search Examiner
P N DAVEY

Databases (see over)

(i) UK Patent Office

(ii) ONLINE DATABASES: CAS ONLINE

Date of Search
4 JANUARY 1993

Documents considered relevant following a search in respect of claims 1 TO 6

Category (see over)	Identity of document and relevant passages	Relevant to claim(s)
P,A	EP 0453922 A1 (BAYER) 30 October 1992, see eg pages 8, 10	1, 3-5
P,A	EP 0453915 A1 (BAYER) 30 October 1991 see eg pages 2, 5	1, 3-5
P,A	EP 0453899 A1 (BAYER) 30 October 1991 see eg pages 7, 9	1, 3-5
A	EP 0297345 A1 (BAYER) see eg page 15 and Example 4	1, 3-5

Category	Identity of document and relevant passages – 39 –	Relevant to claim(s)

Categories of documents

X: Document indicating lack of novelty or of inventive step.

Y: Document indicating lack of inventive step if combined with one or more other documents of the same category.

A: Document indicating technological background and/or state of the art.

P: Document published on or after the declared priority date but before the filing date of the present application.

E: Patent document published on or after, but with priority date earlier than, the filing date of the present application.

&: Member of the same patent family, corresponding document.

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